

stock and poultry killed. At Adair, very heavy hail; several buildings unroofed. At Casey, crops destroyed and buildings badly damaged. At Mento, City Hall unroofed, windows broken, farm crops ruined; almost impossible to estimate the damage. Avoca, Pottawattomie county, Iowa, 12th, 5,000 panes of glass broken; buildings otherwise damaged. In surrounding country calves, hogs, chickens and ducks were killed by the enormous hail; cattle and horses were terribly bruised; hail stones size of man's fist. In Auderbon and Cass counties, 12th, hail stones of remarkable size, and blown into drifts two to three feet deep; growing crops almost obliterated. Rockingham county, Va., 25th, near North Mountain, hail fell to a depth of six inches, the stones being of uncommon size, and remaining on the ground for twenty-four hours. Deadwood, Dakota, 6th, during the afternoon hail stones, size of hen's eggs, fell for over two hours; one stone was reported to have measured twenty-one inches in circumference. Cincinnati, Ohio, 13th, hail stones from two to six inches in circumference, and some reported to have been five inches in diameter; twenty minutes after the storm stones were picked up as large as goose eggs. Greenhouses and gardens damaged severely, and many thousand panes of glass broken; severest storm ever experienced. Abilene, Kansas, 9th, continued for about twenty minutes, causing great damage to window glass, trees and garden crops; in country loss to crops very heavy. Beloit, Kansas, 9th, very heavy, breaking window glass and destroying crops. Solomon City, Kansas, 9th, glass in the north windows of nearly all of the houses in the city were broken; hail stones as large as walnuts, and covering the ground to a depth of several inches. Chester, Ill., 2nd, hail stones nearly the size of goose eggs, doing great damage to gardens, trees and windows, and severely injuring persons and stock. Storm continued for fifteen minutes. Clinton, Ill., 2nd, great damage to fruit and growing crops. Storm continued for about ten minutes. Rockbridge, Ill., 2nd, hail stones one and a half inches in diameter; hundreds of acres of wheat completely torn to pieces, and not worth harvesting; fruit very badly damaged. Walnut Grove, Ill., 2nd, over 500 acres of growing wheat and young corn terribly cut up; large amount of window glass broken. White Hall, Ill., 2nd, most violent storm ever experienced; great destruction of wheat, corn, potatoes and fruit; a number of birds, chickens, and rabbits were found killed by the hail; direction of storm path northwest to southeast; length, about seven miles; width, one mile.

RELATIVE HUMIDITY.

The percentage of mean relative humidity for the month ranges as follows: New England, from 64 to 90; Middle Atlantic states, 60 to 82; South Atlantic states, 55 to 83; East Gulf states, 60 to 80; West Gulf states 52 to 72; Ohio valley and Tennessee, 62 to 77; Lower Lake region, 66 to 77; Upper Lake region, 69 to 76; Upper Mississippi valley, 67 to 76; Missouri valley, 66 to 68; Extreme Northwest, 65 to 74; Northern Slope, 57 to 66; Southern Slope, 29 to 57; Rio Grande valley, 52 to 73; Southern Plateau, 18 to 25; Middle Plateau, 13 to 27; Northern Plateau, 37 to 48; North-Pacific coast region, 66 to 73; California, 36 to 77. *High stations* report the following percentages not corrected for altitudes: Pike's Peak, 48; Santa Fé, 20; Cheyenne, 33; Denver, 31; Mt. Washington, 78.

WINDS.

The prevailing winds during the month of June, 1881, at Signal Service stations, are shown on chart No. II by arrows, which fly with the wind. Over the country east of the Mississippi and south of the Ohio, *southwest*. Over the the Lakes, *northerly*. Over the Middle Atlantic states and New England, *variable*. From Texas northward to Manitoba, *southeast* and *south*. Over the Plateau regions, *south* to *west*. Along the Pacific coast, *westerly*.

Total Movements of the Air.—The following are the *largest* total movements at Signal Service stations: Mt. Washington, 18,323 miles; Wilmington, 14,792; Portsmouth, 11,800; Hatteras, 11,420; Pike's Peak, 11,178; Ft. Sill, 10,418; San Francisco, 10,183; Kittyhawk, 9,717; North Platte, 9,450; Stockton, 9,441; Sandusky, 9,425; Chincoteague, 9,414; Delaware Breakwater, 9,344; Dodge City, 9,238; Ft. Elliott, 9,097; Macon, 8,977; Eagle Rock, 8,729; New Shoreham, 8,657; Cape Henry, 8,496; Thatcher's Island, 8,386; Barnegat, 8,260; Champaign, 8,082; Decatur, 8,067; Cape Henry, 8,029. The *smallest* are Lynchburg, 1,198; La Mesilla, 1,511; Phoenix, 1,780; Florence, 1,880; Lewiston, Idaho, 2,256; Duluth, 2,552; Roseburg, 2,687; Silver City, 2,737; Tucson, 2,821; Memphis, 2,829; Nashville, 2,860; Washington, D. C., 2,939; Augusta, 2,947.

High Winds.—Winds of 50 miles per hour and over were reported as follows: On summit of Mt. Washington, 3d, 5th, 6th, 10th, 14th to 20th, 27th, 29th; maximum velocity, 94 miles NW. 16th. On summit of Pike's Peak, 76, SW. 15th; North Platte, 24th, 25th, 28th; maximum velocity, 60, W. 25th; Ft. Keogh, 60, SW. 5th; Portsmouth, 60, NE. 22d; Sandusky, 57, NW. 29th; Yankton, 56, W. 28th; Dodge City, 56, NW. 25th; Thatcher's Island, 56, NE. 10th; Ft. Buford, 55, NW. 10th; Cape May, 53, W. 8th; Stockton, 52, SE. 28th; Ft. Stevenson, 50, SE. 15th; Delaware Breakwater, 50, NW. 8th; Chincoteague, 50, SW. 29th; Morgantown, 50, W. 29th.

Local Storms.—Storms of this character have not been unusually frequent or severe during the present month, although the loss of life and property has been very great. The most destructive were confined to the region known as the Lower Missouri valley, comprising the western portions